

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Patent Application No. 10/015,565

REMARKS

Reconsideration and allowance of the subject application are respectfully requested.

Upon entry of this Amendment, claims 1 and 3-5 are pending in the application. In response to the Office Action, Applicant respectfully submits that the pending claims define patentable subject matter.

Claims 1, 3 and 4 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicant's admitted prior art in view of Yamamoto et al. (U.S. Patent No. 5,121,017; hereafter "Yamamoto") and Fukasaku et al. (U.S. Patent No. 6,404,086; hereafter "Fukasaku"). Claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicant's admitted prior art in view of Yamamoto, Fukasaku and Ohi et al. (U.S. Patent No. 5,798,589; hereafter "Ohi"). Applicant respectfully submits that the claimed invention would not have been rendered obvious in view of the combined references.

By this Amendment, Applicant has amended claims 1 and 5 to improve clarity and further distinguish the claimed invention from the combined references.

Amended independent claims 1 and 5 are directed to a motor comprising "a substantially cylindrical shaped rotor including a rotor magnet portion; [and] a rotary shaft inserted and fixed through said rotor magnet portion, said rotary shaft including a narrow portion provided on an output side of said rotary shaft so as to be separated from the rotor magnet portion." Claims 1 and 5 further require "an urging member held by the opposite side bearing holding portion for urging the opposite side bearing toward the output side so that the rotor and the rotary shaft are urged toward the output side; [and] a resin washer fitted on said narrow portion of said rotary

shaft and pushed by the urging member via the narrow portion of said rotary shaft to be brought into contact with the output side bearing to thereby be positioned in the axial direction of the rotary shaft.” Applicant respectfully submits that the combined references do not teach or suggest these features of the claimed invention.

As required by claims 1 and 5, when the rotary shaft (11) is urged by the urging member (7), the resin washer (11b) is urged through the narrow portion of the rotary shaft (11) to be brought into contact with the output side bearing (41) and thereby be positioned in the axial direction of the rotary shaft (11). Since the narrow portion (11c) is formed separated from the rotor magnet portion (1a), the washer (11b) does not contact to the rotor magnet portion (1a), which typically has a rough surface. As a result, the claimed structure provides for smooth rotation by preventing an undesirable braking force and rotational loss from being generated by frictional contact between the resin washer (11b) and the rotor magnet portion (1a). Further, the narrow portion (11c) prevents the rotor magnet portion (1a) from being axially shifted by pressing of the resin washer (11b) as the rotary shaft (11) is urged.

In addition, the claimed invention requires that the output side bearing and the opposite side bearing holding portion are connected with each other through the coil bobbin. In other words, the output side bearing and the opposite side bearing holding portion are integrated with the resin same as the coil bobbin.

As the Examiner concedes, neither prior art Figure 2 nor Yamamoto teaches or suggests a rotary shaft having a narrow portion provided on an output side of the rotary shaft, and a resin washer fitted around the narrow portion of the rotary shaft. Rather, prior art Figure 2 shows that

the width or diameter of the rotary shaft increases on an output side of the rotary shaft. Further, Yamamoto teaches that the width or diameter of the rotary shaft 30 remains the same throughout its length.

The Examiner alleges that Figure 16 of Fukasaku discloses the claimed narrow portion and resin washer via a rotary shaft 3 and a vibration damping rubber washer 24 at a narrow portion of the rotary shaft 3. However, this portion illustrated by Figure 16 is not the motor but is the fan attached to the motor 17 (see Figure 15 of Fukasaku). In addition, the washer 24 (which Examiner asserts corresponds to the claimed resin washer) is not attached at a narrow portion of the shaft 3. Rather, a retaining ring 22 is attached to the narrow portion. Further, the retaining ring 22 does not contact an output side bearing and Fukasaku does not teach or suggest that the retaining ring 22 is made of resin, as required by the claims.

Accordingly, Applicant respectfully submits Applicant respectfully submits that the combined references do not teach or suggest the claimed resin washer and narrow portion of the rotary shaft of claims 1 and 5, and one of ordinary skill in the art would not have been motivated to combine and modify the cited references to produce this feature of the claimed invention.

Lastly, independent claims 1 and 5 require “said output side bearing, the coil bobbin and the opposite side bearing holding portion are made of a resin.” The Examiner appears to be relying on Yamamoto for teaching the claimed output side bearing via the upper bearing 25 shown in Figure 1. However, Applicant is unable to find any indication in Yamamoto that the upper bearing 25 is made of resin. That is, although Yamamoto teaches that “[t]he upper bearing supporting member 24b is made of hardened resin such as PBT (polybutylene terephthalate), and

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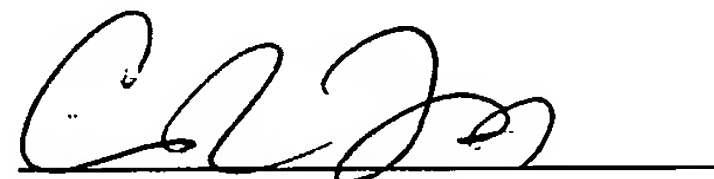
...[the] upper bearing 25 is fixedly secured on the upper bearing supporting member 24b at its center portion" (column 5, lines 5-18), the reference does not appear to disclose the material or structure of the upper bearing 25.

In view of the above, Applicant respectfully submits that independent claims 1 and 5, as well as dependent claims 3 and 4, should be allowable because (1) the applied references, alone or in combination, do not teach or suggest all of the features of the claims, and (2) one of ordinary skill in the art would not have been motivated to combine and modify the cited references to produce the claimed invention.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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23373

CUSTOMER NUMBER

Date: December 1, 2003

Attorney Docket No.: Q67755